# Impact: Innovative Bridge with Market Maker and Concentrated Liquidity

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## Introduction

We have been proponents of SVM from the start and believe it is far superior to other VMs like EVM. As a leading chain, Solana has proven itself by demonstrating how low gas fees, parallel execution, and fast transaction finality can be revolutionary.

We think a multi-chain SVM future is upon us. New chains will adopt SVM for L2 and rollups where transaction efficiency and speed matter, such as in gaming, real-time asset transfer, and real-world assets.

As new SVM chains are introduced, they will need ample liquidity and essential dApps that can meet users' needs. We are building Impact with these new chains in mind, which will be the cornerstone of the ecosystem.

Since their inception in 2018, AMMs have grown to become the core infrastructure of DeFi, allowing anyone to trade and market make with a few clicks. However, although TVL and trading volume have shown exponential growth, the underlying technology has seen little improvement.

Issues such as capital inefficiency and high price impact remain unsolved, while creating a market, creating costs that are rarely seen in TradFi for both traders and liquidity providers.

We propose to solve these issues by
1. Concentrating liquidity
2. Creating a secure bridge across the SVM chains.
3. Developing an IDO platform, a bond market, and a staking mechanism. But let's not get ahead of ourselves.

The bridge will provide the functionality to transfer assets across different SVM chains at a fraction of the cost compared to other bridges.

## Problems and Solutions:

1. New ecosystems need ways to get liquidity from other chains, for example SOL from the Solana network could be wrapped and bridged for a new ecosystem, which could be used in defi protocols or dapps.
2. Stable coins are very important part of any chain or ecosystem, big and trusted stable coin issuers don't issue stable coins on the new chains very easily, and even a chain is successful it takes a lot of time, wrapped version of well known stable coins can be used so that they could be easily redeemed again from source chain.
3. If a project with a token on say solana chain could be easily bridged and used just like that token reflecting the price action of that token, for example a meme coin could be bridged to the destination giving it high TVL and community.

## Concentrated Liquidity

In the constant product model (x · y = k), liquidity is provided across the price range from 0 to infinity. In contrast, concentrated liquidity adds depth to a market by providing capital in a limited price range, thereby improving capital efficiency.

There are several methods of concentrating liquidity, but we take the simple yet unique approach of applying leverage to the value of k. This is achieved by simply multiplying k by the desired level of concentration, which determines the amount of liquidity provided:
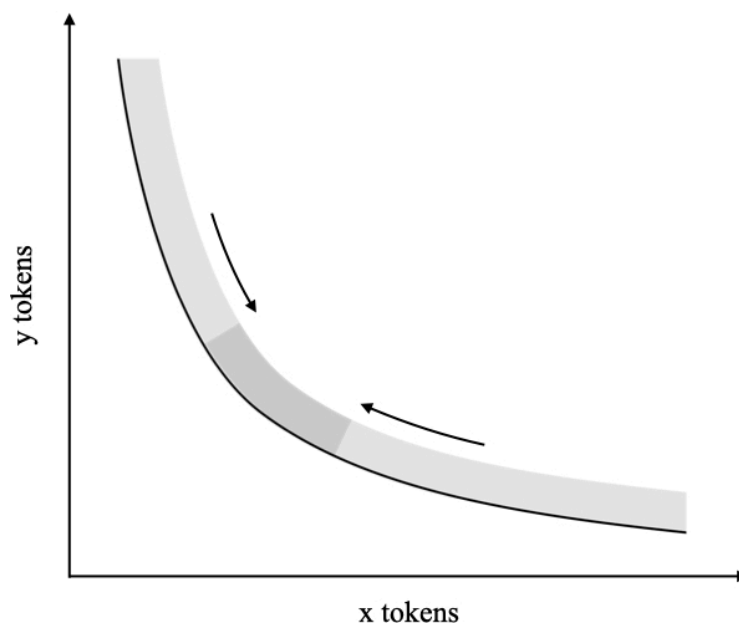
$$x \cdot y = c \cdot k = K$$



Figure 1: Concentrating liquidity

## Bridge Architecture

The Solana bridge uses smart contracts to lock assets on chain A and mint equivalent tokens on Chain B. Key components include:

1. *Locking Contracts:* Securely receive assets on the source chain.

2. *Oracles:* Decentralized oracles verify and relay transaction data between blockchains.
3. *Minting Contracts:* Mint new tokens on Solana equivalent to the locked assets.

Each transaction undergoes multi-step validation to ensure accuracy and security. Validators or oracles confirm the locking of assets before minting new tokens on Solana.

## Supported Networks

The bridge supports various blockchains, ensuring seamless asset transfer across different ecosystems. This includes:
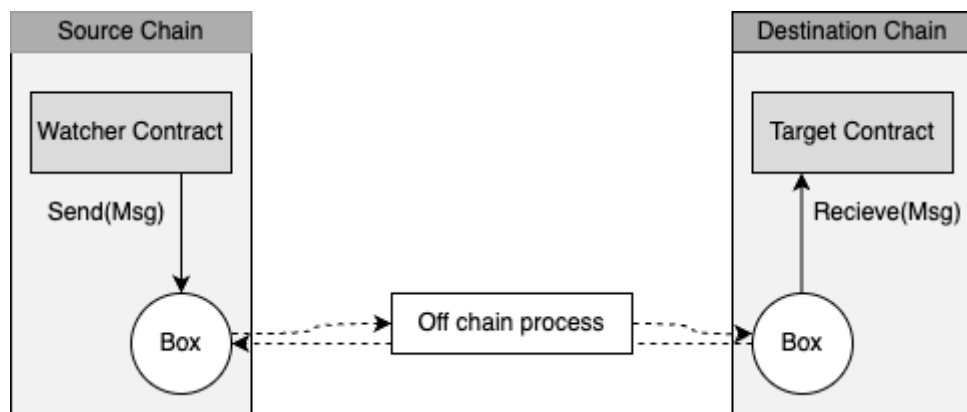
1. Solana
2. Eclipse
3. Axion
4. Yona



Figure 2: Bridge Architecture

Use Cases:
1. Decentralized Lending and Borrowing: By bridging assets from chain A to chain B, users can utilize their tokens as collateral on DeFi lending platforms, which offer much better opportunities on chain B.
2. Multi-Chain Investment Strategies: Investors can diversify portfolios by multi-chain investment strategies facilitated by a seamless cross-chain bridge.
3. Cross-Chain Staking: Bridge is making the cross-chain staking and searching for different yield opportunities on different chains easier.
4. Trading on DEXs: Bridging assets allows users to access decentralized exchanges (DEXs) on different blockchains, enhancing trading flexibility and options.
5. Gaming and NFTs: Bridges enable the transfer of in-game assets and NFTs between blockchains, expanding their use and exchange in various gaming ecosystems.